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## CHINESE EXPERIENCES AND LESSONS LEARNT IN AGRICULTURAL DEVELOPMENT SINCE 1949

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### Abstract

The Chinese agricultural development has made remarkable achievements, especially in recent four decades, while as several issues also emerged at the same time. This paper uses a historical view to find out the facts that exist in the agricultural development experiences in China since the People's Republic of China founded in 1949, both achievements and major issues. In this paper, the Chinese development experiences have been divided into three phases in accordance with the developmental characteristics in each stage, and then to search for the main achievements in the past decades and problems that need to solve currently.

## 1. INTRODUCTION

Agriculture is the oldest industry in human history. In the past six decades, especially in the recent forty years, Chinese agricultural development has made remarkable achievements, however, behind these achievements; the reality of Chinese agricultural development had been through different phases and went through ups and downs. In addition, there are still many issues exist in Chinese agriculture and Chinese society. For instance, one major reflection is the highest Gini coefficient of 0.473 in 2013<sup>1</sup>, in China, and the Household per capita net income of China for the rural residents and urban residents are 1,271 USD and 3850 USD respectively in 2013<sup>2</sup>. The

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<sup>1</sup> Commonly, if the Gini coefficient is above 0.4, then it means that there are large income gaps among residents in a community.

<sup>2</sup> China Rural Statistical Yearbook 2014, available on: <http://www.yearbookchina.com/naviBooklist-YMCTJ-0.html> (Accessed on: 2016-1-3).

biggest income gap between rural residents and urban residents is one of the major issues that impedes Chinese economic development and agriculture industry development.

The analysis on Chinese agricultural achievements and lessons can help readers to get to know China's domestic agricultural strategy. Since the founder of the People's Republic of China in 1949, the history of Chinese agricultural development can be divided into three phases and different phase has different characteristics. This division is based on the Chinese national development strategy and reforms in different time periods.

## **2. DIFFERENT PHASES IN CHINESE AGRICULTURAL DEVELOPMENT SINCE 1949**

The Chinese agricultural development since 1949 can be divided into three major phases<sup>3</sup> in accordance with different characteristics of every period. These phases are from 1949 to 1957, 1958 to 1978, 1978 until now. These phases are divided for three major factors: first, the Chinese policy influencing each period; second, the economic status of each period; third, living standard of rural residents.

### **2.1. The agricultural development in early days after the founder of People's Republic of China (from 1949 to 1957)**

In this early stage of Chinese agriculture, the majority of the population in rural China is poor and live without own land because of long war damage and the shackles of thousands of years' feudal land system. In order to meet the urgent requirements of the majority of farmers on the land, the Chinese government implemented agrarian reform.

In 1950, with the promulgation of the People's Republic of China Agrarian Reform Law, feudal exploitation of land ownership was abolished, China started to implement Peasantry land ownership. The land system of feudal exploitation, which continued for thousands of years in China had completely abolished in 1952. By 1952, the agricultural production had reached above the highest level in the history of China and farmers' enthusiasm for production has greatly improved.

Meanwhile, the closed small peasant economy has many disadvantages in agricultural development. It is not conducive to the production of the modern social division of labor; it is not conducive to set up large-scale irrigation and water conservancy construction; it cannot withstand a variety of severe natural disasters; it is unable to meet the needs of industrialization of agriculture for more and more industrial raw materials, capital and markets.

In order to change the situation of dispersed rural productivity shackles of backward peasant economy cannot meet the development needs of national economic construction, from 1953 to 1956, China began to implement reforms in agriculture, which is taking the path of agricultural cooperation and transfer the individual agricultural economy to the socialist public economy.

During this phase, mechanized agriculture reached a certain level of development. The major measures of the Chinese government of the period are promoting new farming tools and develop water equipment; founded the mechanized state farms; pilot and tractor stations of state founder agricultural machinery industry.

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<sup>3</sup> This division is based on the Chinese economy development stages since 1949. [http://www.cssn.cn/zt/zt\\_zh/xwzt/ncgzhzy/bglc/201412/t20141221\\_1450910\\_1.shtml](http://www.cssn.cn/zt/zt_zh/xwzt/ncgzhzy/bglc/201412/t20141221_1450910_1.shtml), (Accessed on: 2016-1-15).

## **2.2. Establishment and development of the people's Commune period (from 1958 to 1978)**

The period from 1958 to 1978 is called the People's Commune period in the Chinese agricultural history. And during this period, the 'Left' mistake, which has symbols of high index, whim, rhetorical style and the 'communist wind' are serious flooding up. The People's Commune system is an attempt to collectivization of agriculture, but this production model seriously damaged the interests of farmers and a great blow to the farmers' enthusiasm for production, it also devastated agricultural production and lead to a sharp decline in agricultural production.

In 1962, the CPC Central Committee meeting makes a preliminary summary of the lessons in the 'Great Leap Forward' and start to take a number of economic and political measures, therefore, from 1962 to 1966 the national economy has been a relatively smooth recovery and development. Agricultural mechanization is in a stage of exploration and adjustment from 1958 to 1965. The main policies in this stage are as follows: the announcement of the fundamental way to improve agriculture is agricultural mechanization; vigorously movement on implements reform; the tractor stations' state decentralization and re-nationalize; development and adjustment of the agricultural machinery industry; Establishment of a farm machinery repair network.

Then from 1966 until 1976 is the Cultural Revolution, during this phase, the China suffered severe social unrest, the rural economy and rural production order has been severely damaged, which lead to serious damage to agriculture and Chinese agriculture has been through a yield long-term stagnation.

## **2.3. Construction of the new era of modern agriculture (since 1978 until now)**

Since 1978, CPC has summed up the lessons learned from the development experiences since the PRC founded, especially summed up the extremely mistakes that happened during the Cultural Revolution period. Chinese government started to implemented the economy centered construction national development strategy and a series of reforms.

From 1978 to 1984, the main feature is a reconstruction of the household responsibility system in rural areas and promotion of micro-management body in rural areas. In the winter of 1978, eighteen farmers signed off a contract of production contracted to each household in Xiaogang village, Fengyang County, Anhui Province set off a prelude to the land contract with an individual in the whole China. In January 1983, the CPC Central Committee issued a circular (central document of 1983) 'The Problems of Current Rural Economic Policy' and thorough affirmed the household contract responsibility system. Since then, the country has begun to spread on agricultural household contract responsibility system and abolish of the people's commune old system.

During 1985 to 1991, the feature of this period is reform of agricultural products circulation system and the rise up of township enterprises. With the determination of the agricultural basic operating system and the improvement of agricultural production efficiency, the urgency of agricultural products circulation system has become increasingly prominent. In 1985, the Chinese government takes comprehensive reform in the unification purchase of agricultural products. Additionally, with the implementation of price liberalization on the main kinds of agricultural products and let them being determined by the market forces of supply and demand. Along with the reform of the circulation system of agricultural products, the Chinese government has encouraged farmers to develop a diversified crop structure optimization, thereby to promote the transition from small-scale agriculture to large-scale agriculture.

From 1992 to 1997, the main characteristics are the proposed agricultural industrialization strategy and emphasize the stability of land contracting and management, then, steadily promote the circulation system of grain and other major agricultural products. During this stage, although not gain the ultimate success of the grain distribution system, with the initial establishment of market

regulation framework, different varieties of agricultural products have basically achieved the goal of letting the market regulate the supplying chain. And major agricultural products have achieved the historical transformation from food shortages in the long term to supply and demand balance<sup>4</sup>.

Since 1998 till now, the main feature is with the implementation of urban and rural strategy, the abolition of agricultural tax, the stage of industry-driving-agriculture, town-driving-rural area. Agricultural internationalization is an important content of this period's reform. Since China joined the WTO in 2001 that means China's agricultural development has entered a new period. According to WTO requirements of the agreement, China makes significant reform on domestic market access, domestic support and export subsidies, and then, makes the average agricultural tariff fell from 23.2% in 2001 to 15.23% in 2006<sup>5</sup>, this is far below the developed countries like the US, Japan and the EU. At present, China has become one of the country that has lowest overall tariff level of agricultural products.

Since the Opening up reform, with the agricultural mechanization and education, the agricultural technology system has gotten a large degree of development. With the extension of large agricultural machinery and the steady implementation of strategy of promoting agriculture by applying scientific and technological advances, agricultural talents and experts are more and more abundant, because of which, scientific and technological achievements in agriculture continued, biotechnology innovation has repeatedly been used in crop improvement. Chinese agriculture ushered in an era of comprehensive development.

### **3. THE MAIN ACHIEVEMENTS OF CHINESE AGRICULTURAL DEVELOPMENT SINCE 1949**

Since the PRC founded, Chinese agriculture has been through many ups and downs. This part will mainly concentrate on the main achievements in the Chinese agricultural development process. These four major achievements are summarized based on historical perspective.

Firstly, rural economic structure has changed dramatically and achieved a comprehensive development of the rural economy. Especially in the latest three decades, through the development of township enterprises and small towns, Chinese rural non-agricultural industries and urbanization have been tremendous development.

By 2007, the personnel of township enterprises reached 150 million, accounting for 19.5% of employees, an increase of 121.74 million more than in 1978, the contribution to employment growth by 33 percentage points; create added value 6.8 trillion, representing an increase of social value 27.6%, compared with an increase of 6.75 trillion in 1978, an annual growth rate of 18.5%, the contribution to economic growth by 28 percentage points; total profit of 242 billion USD with an increase of 241 billion USD more than in 1978 and the annual growth rate up to 19.6%<sup>6</sup>. Township enterprises' projections have optimized the industrial structure in rural areas, and promote the coordinated development of economy and overall prosperity in rural areas.

Secondly, agricultural science and technology has been greatly improved, also significantly improved agricultural irrigation, mechanization level. Science and technology are core elements in the agricultural developing value chain, with the improvement and implementation of new science

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<sup>4</sup> From the fourth Press Conference of Chinese National Day, answered by Deputy Minister of Agriculture, Mr. Chen Xiaohua, <http://www.ce.cn/cysc/ztpd/09/nyfz/>, (Accessed on: 2016-02-10)

<sup>5</sup> From [www.cssn.cn](http://www.cssn.cn), (Accessed on 2016-01-30)

<sup>6</sup> Quoted from "CPC Central Committee on rural reform and development of a number of major issues", People's Publishing House in October 2008 edition, page 35.

and technology in the agricultural area, with the outcome of agricultural development, China has also entered the ranks of the world's agricultural scientific and technological power.

During the 'Twelve Five' <sup>7</sup> period, the rate of science and technology contributes to Chinese agricultural development is more than 55% <sup>8</sup>, which effectively promoted agricultural and rural economic development and rural livelihood improvement. The major implementation that Chinese government applies to the whole country's rural area is agricultural technology and science extension, which leads to the newly agricultural technology being implemented by local farmers in rural areas. The Chinese agricultural science and technology development enter into a new level.

In the Eleventh Five-Year period<sup>9</sup>, China's agricultural mechanization level has significantly increased, which to the successful achievement of agricultural production means transferring from human animal power based to mechanical work based.

Thirdly, steady growth of farmers' income help to achieve great success in poverty alleviation and development. From Table 1, the per capita income of Chinese rural residents has increased rapidly since 1978, until 2013, rural residents' per capita income is reaching 1270 USD. The significantly reduced rural poverty population is another symbol. In 1978, China has about 250 million people lives in poverty in rural areas and the poverty rate is 30.7%; Then, in 2014, the rural poor population was 70.2 million, the poverty rate dropped to 7.2%.

**Table 1: China's rural residents' per capita net income in major years**

Year	1949	1957	1965	1978	1985	1990	1995	2000	2005	2010	2013
Per capita income (USD)	6.25	10.43	15.30	27.33	56.80	98.04	225.39	321.91	464.99	845.57	1270.84

Data source: [China Rural Statistical Yearbook 2014](#)

Poverty alleviation and development of China not only effectively reducing its own country's poverty, but also accelerated the process to eliminate world's poverty. The Chinese poverty alleviation implementation also reversing the rise of the world's poor population continued in the past fifty years and China has become the world's first advanced county to achieve the UN Millennium Development Goals that halving the country's poor population (Gong, 2009).

Fourth, the promoting of rural public utilities lead to achievements in comprehensive social progress in rural areas, which especially embodies in education, health service and social security system. Rural education has made historic progress. In 1949, primary school enrollment rate was only 20%, the secondary school enrollment rate was 6%, the illiteracy rate was 80%. And then with the reform and development of the education system, by the year 2007, the proportion of illiterate rural laborers was 6.6%, the illiteracy rate of young adults was dropped to 3.58%. 150 million rural students in their compulsory education phase have been exempted from tuition fees and textbooks<sup>10</sup>. By 2009, all areas of China's nine-year compulsory education coverage reached more than 95%<sup>11</sup>.

<sup>7</sup> Since 1953, CPC start make Five Year Development Plan, the 'Twelve Five' means the twelfth Five Year Plan, this period is from 2011 to 2015.

<sup>8</sup> Ministry of Agriculture: the end of the Twelfth Five-Year Agricultural Technology Progress Contribution rate will exceed 55%, <http://www.chinanews.com/> (Accessed on: 2016-2-16)

<sup>9</sup> The Eleventh Five Year Period is 2006 to 2010.

<sup>10</sup> From the website of Ministry of Education of the People's Republic of China, <http://www.moe.edu.cn/> (Accessed on: 2016-2-25).

<sup>11</sup> <http://news.sohu.com/20090908/n266558753.shtml> (Accessed on: 2016-2-25).

In health service area, before 1978, China has set up the barefoot doctor system in a rural cooperative medical system in accordance with the economic level. The UNICEF 1980-1981 annual report spoke highly of China's 'barefoot doctor' system, which provides primary health care for Chinese rural areas and this provides a model for underdeveloped countries to improve their level of health care (Zhang *et al.*, 2002). By the end of 2014, the total participants of the New Rural Cooperative Medical<sup>12</sup> reached 736 million people, the participation rate was 98.9%<sup>13</sup>. China has basically established a rural medical and health service system currently.

The rural social security system has gradually established and improved. Before the Opening up reform, the main characteristics of the rural social security system have been the establishment of a 'five guarantees'<sup>14</sup>. After the Opening up reform, the social security system was established, which is guided by the spirit of socialist market economy. By March 2008, 35.66 million people living under the poverty line were covered by the Minimum living standard security system in rural areas.

Agriculture is the foundation of the national economy; these developments mentioned above in Chinese agriculture make great contribution to substantial growth in the Chinese economy. In order to achieve industrialization as soon as possible, China has collected substantial funds for industrial development from agriculture (Zhang, 2014). What's more, a large number of rural surplus labor force become the main force in the construction industry and urbanization. After 1978, with the urban construction employment system reform, there were three Chinese workers tides. In 2014, the migrant workers reached 274 million<sup>15</sup> and they become the main force of Chinese urban construction.

Increase agricultural productivity is a prerequisite for industrialization, agriculture provides the market with a wealth of agricultural products, also promotes the prosperity of an active market. As the most basic industry of a country, the contribution of agriculture to a country not only in economic aspects, as well as in social stability, ecological balance are having an inseparable coordinating role of agriculture. Therefore, the summary and conclusion of the Chinese agricultural achievements embody the relationship between Chinese agricultural development and national economic development.

#### 4. THE MAIN ISSUES IN CURRENT CHINESE AGRICULTURAL DEVELOPMENT

In the Chinese agricultural development process, not only achievable, but also issues that need to be paid attention to. During this part of chapter four, the main issues or lessons learnt in current Chinese agricultural development is being discussed.

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<sup>12</sup> The new rural cooperative medical care, is defined as a system that the government organize, guide and support; individual, collective and multi-government offer funding; farmers participate voluntarily, serious disease coordination based medical mutual aid system. The new rural cooperative medical care system began to make pilots in partial China since 2003, and then gradually achieved comprehensive coverage of the whole countries' rural residents in 2010.

<sup>13</sup> From <http://politics.people.com.cn/n/2015/1105/c1001-27782363.html> (Accessed on: 2016-3-1).

<sup>14</sup> 'five guarantees' include: guarantee for food, guarantee for clothing, guarantee for medical care, guarantee for housing, guarantee for burial expenses (for orphans this changes to guarantee for education). The beneficiaries of 'five guarantees' refer to support the elderly, the disabled and minors in rural China that have no labour capacity, no living resources or no obligatory legal support. The 'five guarantees' funds of a region cannot less than 60% of per capita annual net income of rural residents in last year.

<sup>15</sup> National Monitoring Survey Report 2014 Migrant Workers, <http://www.stats.gov.cn/>, (Accessed on: 2016-3-6).



Firstly, to pursuing a sustainable development pattern is one of the main issues in the Chinese agricultural development. Even though the great achievements in the Chinese agricultural economy, over-exploitation of agricultural resources, agricultural inputs used in excess, over-exploitation of groundwater, internal and external sources of agricultural pollution problems and other problems are of increasingly prominent, major challenges are existed in sustainable agricultural development.

With the increasing hard resource constraints to achieve the task, of security of supply of grain and other major agricultural products more difficult. In recent years, the annual occupation of construction, land to farmland is around 0.8 million acres<sup>16</sup>, the soil plow layer of the occupied farmland is a serious waste of resources. Environmental pollution is another serious issue, the proliferation of 'industrial three wastes' <sup>17</sup>and city life pollution into rural areas, cadmium, mercury, arsenic and other heavy metals continue to penetrate to agricultural production and environmental. Point of major pollutants in soil exceeding the rate of 16.1%<sup>18</sup>.

Ecosystem degradation obviously and makes ecological conservation agriculture tasks more difficult. In China, until 2015, there are 2.95 million square kilometers of soil erosion area, 1.73 million square kilometers of desertified land and 12 square kilometers of rocky desertification area. Additionally, the average annual amount of soil erosion 4.5 billion tons<sup>19</sup>. The un-establishment of land and water resource, asset management and other institutional mechanisms, this leads to lack of protection and restoration of forest, lake and farmland, etc.

Secondly, although agricultural technology and science extension system has played a significant role in the Chinese agricultural development in the past six decades, there are still a number of issues existed in Chinese agricultural extension. The mechanism of agricultural extension investment is imperfect, there is a serious shortage of financial supply. The knowledge structure of agricultural extension officers is not comprehensive and reasonable, which is not suitable for agricultural industrial chain development. What's more, there is a lack of incentive mechanism for agricultural extension workers.

Thirdly, with a large number of rural labor forces move to cities, rural idle lands are increasing. Therefore, the Chinese government began to encourage the implementation of rural land use right transfer policy. However, during this process, there are a number of issues need to be taken consideration. One issue is that some farmers do not have the awareness of land transfer, on the other hand, some farmers do not understand the land transfer policy and they are afraid of that if they transfer their land's rights of use, they will lose their life reliance, therefore, they would rather let their land stay abandonment than transfer the land's rights of use. Another issue is that the mechanism of land transfer is not perfect and also the management of land transfer is not standardized.

Fourthly, Chinese rural social security system is not perfect. At present, in rural China, the social security system is mainly consists of Rural Minimum Living Security System, the New Cooperative Medical System, Rural Medical Assistance System, Five Guarantees System, Natural Disaster Relief System, the New Rural Pension System, etc.<sup>20</sup>

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<sup>16</sup> National Sustainable Agriculture Development Plan (2015- 2030), Information Office of the Ministry of Agriculture, [www.cfc.agri.gov.cn](http://www.cfc.agri.gov.cn), (Accessed on: 2016-3-6).

<sup>17</sup> 'Industrial three wastes' refers to industrial emissions of 'waste water, waste gas, solid waste.'

<sup>18</sup> National survey of soil pollution bulletin (Ministry of Environmental Protection and the Ministry of Land), 2014, [http://www.zhb.gov.cn/gkml/hbb/qt/201404/t20140417\\_270670.htm](http://www.zhb.gov.cn/gkml/hbb/qt/201404/t20140417_270670.htm), (Accessed on: 2016-3-7).

<sup>19</sup> National Sustainable Agriculture Development Plan (2015- 2030), Information Office of the Ministry of Agriculture, [www.cfc.agri.gov.cn](http://www.cfc.agri.gov.cn), (Accessed on: 2016-3-6).

<sup>20</sup> Report on the situation of the social security system in rural areas, (2009), People's Republic of China State Council, [www.chinanews.com](http://www.chinanews.com), (Accessed on: 2016-3-9).



In every individual system, there are problems need to be solved. For instance, the amount of funds allocated to every target family is very limited according to the current Rural Minimum Living Security System; moreover, it is difficult to determine the target population due to the lack of clarification about whether families are qualified to be secured by the system (Jiang & Zuo, 2013). In addition, rural people are still facing much financial pressure when they get severe disease because the actual refunds farmers obtained are still relatively low, even though the New Cooperative Medical System was implemented in rural China (Sun, 2011). At the same time, rural residents are not very willing to spend money on health insurance when they stay healthy. At present, authorities need to make much effort to persuade rural families to be involved in the policy every year (Zhu & Wang, 2010).

Fifthly, there are many social issues that exist in rural China, for example, the left-behind population issue<sup>21</sup>. According to Ye and Pan (2011), in rural China, migrant workers to the city is very common and their children, who is left-behind by their parents, are taking care of elderly people or other relatives have many negative issues need to be taken consideration with. Left-behind children have more possibilities to have depression problems because the separation with parents (He *et al.*, 2012). Moreover, left-behind children have to spend more time on domestic housework and farm work than other children (Chang *et al.*, 2011), this may lead to the time allocation burden on these children of their study and entertainment time.

The last but not the least, in the past six decades, although Chinese economy has achieved enormous accomplishment, but because the implementation of the policy of restriction of migration from rural areas to urban areas, the biggest income gap has developed between urban and rural China (Zhao, 1999; Zhang & Shunfeng, 2003). This income gap leads to the unbalanced development between rural areas and urban areas, and it is an urgent issue that has negative influences on Chinese economy.

With all these issues that have negative effects on Chinese agricultural development, the Chinese government and related agencies have already aware of the existences of these problems, but still need efforts and intelligence to really solve these issues.

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<sup>21</sup> Left-behind population in rural China mainly point to the children, elderly people, women that are being left-behind in rural household because their parents, children, husbands have to go to cities to be city workers to earn money for the whole family, the left-behind population have to live with themselves and this lead to a lot of social problems in rural areas in China.

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